

# A GREAT AQUEDUCT.

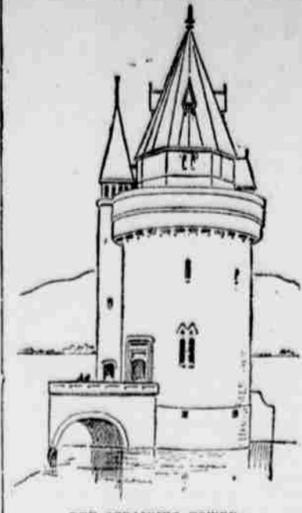
LIVERPOOL'S SUPPLY OF WATER CARRIED A LONG WAY.

Ten Million Dollars Expended in Its Construction - A Lake Over Four and an Aqueduct Sixty-eight Miles Long.

ACCORDING to the Chicago Herald Liverpool-to-day stands foremost among the cities of the world in the extent and completeness of its water supply. When the Duke of Connaught pressed a button recently in that city and caused a fountain to play in one of the public parks he marked the partial completion of one of the grandest schemes ever devised for bringing an abundance of pure water to a community. No matter how extensive an epidemic of contagious diseases may become, the citizens can be certain that their drinking water is beyond the reach of contamination from sewage or other deleterious elements.

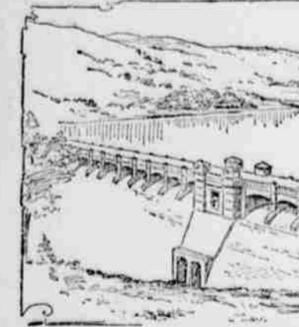
The rapid growth of Liverpool in population and trade made it necessary

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THE STRAINING TOWER.

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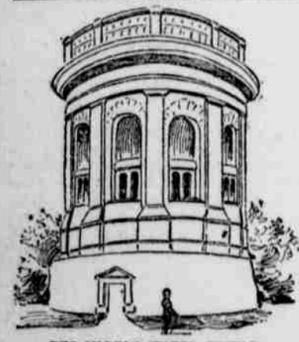


THE VYRWY LAKE AND EMBANKMENT.

some years ago for the corporation of the city to give serious consideration to the subject of an increased water supply. The valley of the River Vyrnwy, in North Wales, was found to possess special advantages as the source of supply of the precious fluid, although its distance from Liverpool, forty-five miles in a direct line, necessitated the construction of an aqueduct sixty-eight miles in length, presenting engineering problems of the most difficult nature.

The plan of G. F. Deacon, the engineer in charge of this extensive piece of engineering, was to construct an embankment across the mouth of the valley to intercept the water of the Vyrnwy, and store it for the use of the inhabitants of the distant city. The result of his labors has been to create a lake four and three-quarter miles in length, and from a quarter to three-eighths of a mile in width. The embankment of Idam is a magnificent structure, and is 1172 feet in length from rock to rock of the two sides of the valley.

From the lowest part of the foundation to the parapet of the carriage way over it the height is 151 feet, while from the river bed to the parapet is 101 feet. The dam is a structure of some architectural pretensions, the viaduct being sup-



THE NORTON WATER TOWER.

ported on a range of elegantly proportioned arches rising from the sill. Every square inch of the work was treated as if on it alone depended the success of the whole undertaking, and the utmost care was taken to have the whole mass of stone work practically homogeneous.

The water is led from the lake through a large straining tower, built on a projecting piece of ground. No water can reach this point until it has been in the lake a considerable time. This building is fitted with straining appliances of the most ingenious design, and the water is allowed to pass into the aqueduct only after having first gone through copper wire gauze, having 14,400 meshes to the square inch and with an aggregate area of 2034 square feet.

Great as are the dimensions of the dam, its construction was a simple matter compared with the making of the aqueduct, which, as has already been stated, is sixty-eight miles in length. It consists chiefly of tunnels through which the ultimate supply of 40,000,000 gallons a day may be passed without filling them, and three lines of pipes, varying in diameter from thirty-nine inches to forty-nine inches. Throughout the greater part of their length the pipes are buried beneath the ground, and where this is not the case they are carried on archways or led through the subways. As the full available supply is not yet required only one of the three lines of pipes has so far been laid.

On the line of the viaduct are four balancing reservoirs and filtering beds. One of these, the Norton water tower, situated near Runcorn, is remarkable not only on account of its size, but also for its excellent architectural proportions. A view of this tower is shown in

one of the illustrations. In the construction of the viaduct many obstacles were encountered—railways, canals and rivers having been crossed under varying conditions. The crossing of the river Weaver was a formidable task, three

pipes being laid at once without obstructing the traffic. These repose in beds of concrete at some depth below the bottom of the stream.

The crowding feat of the engineer, however, was the construction of the tunnel under the Mersey, at Liverpool, through which pipes conveying the water are led. This was not only a troublesome but the most costly part of the undertaking. Shafts, fifty feet in depth, were sunk in either shore, and these were connected by a subway excavated under air pressure.

There are, of course, many details of this great work which have not been mentioned, but enough has been said to indicate its extent and character. The cost of the completed undertaking will approximate \$10,000,000, but it has secured to Liverpool for many years to come a generous supply of wholesome water.

**A Good Indian.**

Washeka, or Killa-on-the-Run, whose portrait is here presented to the readers of the Free Press, is one of the good Indians who need not die in order to be appreciated. He is the Chief of the Shoshone, and lives at the Shoshone Indian Agency in Wyoming.

He won his name by his prowess as a marksman, his aim being unerring. A few years ago most of the surrounding tribes were hostile to the Shoshone, the allies of the whites. The country was subject to constant raids and attacks from armed bands of marauders. Washeka performed many deeds of valor in defense of his people. He was never seriously wounded; a scar which shows on his chest is from an arrow wound received from fighting the Crows. He has on several occasions rendered valuable aid with his warriors to the United States troops in repelling unfriendly Indians.

In the portrait the head-dress is a war-bonnet made of eagle's feathers. A similar one—it may be the identical one—was sold in New York for the benefit of the mission for \$30. In his left hand he carries the ordinary pipe used by Indians, which they manufacture themselves out of a soft red sandstone, not much harder than clay when cut out of the quarry, but which becomes quite hard when exposed to the atmosphere. Washeka does not know his age, but thinks he is about eighty. His hair is gray, but he is still erect and walks with a firm step. He has endowed the school at the Shoshone Indian Agency with 160

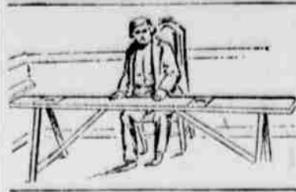


WASHEKA.

acres of land for the benefit of the Bishop Talbot School, where the youth of his tribe are taught farming and industrial arts.—Detroit Free Press.

## A Sandwriting Table.

The accompanying picture shows the singularly primitive way in which writing was taught in some places so recently as sixty years ago. The sandwriting table consists of a plain board with a ledge around it and resting upon logs. Ordinary sand was placed upon the board, and with the forefinger the pupil was taught to trace the letters upon the sand.



When the table was full the characters could be easily obliterated with small, square boards, used for smoothing it over. The old man, Robert Revere by name, is now about eighty years of age, and more than sixty years ago he learned to write upon this very table during the time he attended the Sunday-school in the Dennington Church at Ipswich. This sandwriting table is said to be the only one still existing in England.

## The Giant's Causeway.

The Giant's Causeway is situated at the northern extremity of County Antrim, a short distance from Post Rush, Ireland. It consists of countless hosts of basaltic pillars, varying in shape from a pentagon to an octagon, the average length of each column or pillar being about eighty feet, the whole stacked so closely together that a knife blade could hardly be inserted between them. But the formation of these pillars is not the least wonderful part about them, for although they may be counted by thousands and tens of thousands, each column is fashioned with a symmetry that suggests a mason's handiwork. Their composition is a perfect fusion of one-half flinty earth, one-quarter lime and clay and one-quarter almost pure iron, each pillar being divided into regular lengths or joints which come together as a perfect, natural ball-and-socket union. Although to be found in small detachments (embedded in the cliffs, sands, etc.) for some distance along the shore, the principal aggregations forming the causeway proper consist of three projections or tongues known as Little, Middle and Grand causeways. These singular columns are of different lengths, as has already been hinted, and present an astonishing appearance as they stand, an army of at least 40,000 strong marshalled on the shores of Erin as if ever ready to do battle with the rising tide. One portion of this marvelous natural freak is known as "Lord Antrim's Parlor;" other sections by such names as "The Giant's Chimney," "The Giant's Head," "The Nursing Child," "Hen and Chickens," "The Priest and His Flock," besides many other mysterious combinations which are at once fantastic, weird and descriptive. One of the most interesting features of the causeway is "The Giant's Organ." This huge "instrument" consists of a group of pillars of various lengths set apart on the side of the main cliff. The larger columns being in the center and the smaller ones tapering off on either side, after the fashion of organ pipes, admirably sustain the idea which the name "Giant's Organ" conveys.—St. Louis Republic.

## Russian Immigrants in Maryland.

A correspondent of the Baltimore Sun has been looking into the doings of the Russian immigrants in Maryland, where there are quite a number of them. He says that all the employers to whom he has spoken commend them, and especially their women. These work in the field, make hay, cut and stack corn, load and unload wagons as well as the men or better. Their work about the house and dairy is universally pronounced good. The men get \$10 a month, a furnished tenement house, their provisions and the use of a cow for a family. The women receive fifty cents for every day that they work. They save about every dollar of their earnings. They subsist mostly upon a kind of soup, which they thicken with middlings and dark flour, letting it sour before eating it. They still have the clothing they brought from their former homes. It is warm, strong and lasting. All of this colony come from the lower Volga, but they are of German descent and speak that language intelligibly.

## Stockings of Paper.

Stockings of paper are among the latest products of German inventive genius. A Berlin paper, devoted to the shoe trade, states that the socks are made of a specially prepared impregnated paper stock, for which an extraordinary effect on perspiring feet is claimed. The paper absorbs the moisture as rapidly as it is formed, and the feet remain dry and warm and perfectly sound, while the constant temperature maintained in the shoes is said to be a great preventive of colds. The manufacturers instruct bits of their paper to be put between the toes, and then a large piece to be wrapped over the foot, and the stocking to be put on over all. Because paper absorbs moisture may be a reason why some shoemakers make shoes with paper soles instead of leather.—New Orleans Picayune.

## Transformation of the Lunch Counter Fiend.

Outbreak in a Spanish Prison Results in Awful Slaughter.

A Reuter dispatch from Tarragona, capital of the province of the same name in Spain, states that a mutiny broke out among the convicts in the prison at that place. The convicts obtained virtual control of the prison, and the troops of the garrison were called to bring them under subjection. As the convicts persisted in refusing to surrender the troops fired upon them, killing nine and wounding 18. The others were then driven back to their cells.

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# TELEGRAPHIC BRIEFS

Happenings The World Over.

## CLEANINGS OF INTEREST TEND TO TOLD BOTH DOMESTIC AND FOREIGN.

Financial and Commercial.

The Swansea Tin Platers' Association, which a fortnight ago discussed the advisability of seeking new markets, met again Tuesday, and resolved to defer the pushing of the tin plate industry in new markets. It was also resolved to appoint a committee to watch the development of the American tariff as affecting the tin plate trade.

General manager Odell, of the Baltimore and Ohio railroad, gave orders for the employment of 2,000 additional men in the workshops of the company in Baltimore, Glenwood, Pittsburg, Newark, O., and Grafton, W. Va., which will add over \$100,000 per month to the salary list. Mr. Odell has also ordered the construction of a number of box cars with a carrying capacity of 35 tons, and a lot of gondolas. This, in connection with an order for 60 new locomotives given to the Baldwin Locomotive Works yesterday, and the further order for 40 locomotives, which will be placed in a few days, indicates the preparation this road is making for the World's Fair traffic.

The Rockford (Ill.) Plow Company made an assignment. The liabilities aggregate nearly \$70,000, and the assets are estimated at \$110,000. The company has been in bad shape for several years, and the managers concluded to make an assignment and close up the business.

Titus, Sons & Co., plush manufacturers of Bridgeport, Conn., say they will return to England if the tariff is changed. The New York firm controlling the Union Metallic Cartridge Company and the Bridgeport Gun Implement Company asserts they will go out of business if the tariff is altered.

## Crime and Penalties.

Edward Skamdi, of near Winnipeg, was robbed of a considerable sum of money the proceeds of the sale of his farm and stock, then murdered and placed on a railroad track. He was found with his head cut off.

Two masked burglars got into the bank at Woodstock, Minn., and compelled Cashier Perry and his assistant, who were working late, to open the vault. It is said they got only \$1,000, but it is thought the amount is larger. A posse is in pursuit.

Giuseppe Pitana, an Italian living in Boston, whose wife died about six weeks ago, murdered his two children, age 6 and 11, and then endeavored to commit suicide by cutting his throat. It is not thought he can live.

One hundred and fifty armed men in Webster parish, La., are searching for Link Waggoner, the desperado. Last Saturday Waggoner's gang fatally shot William Holland while the latter was holding his baby in his arms at his own house.

## Miscellaneous.

After many delays and vexatious changes of program, natural gas from the Trenton rock bed, upon which the Indiana field rests, was admitted to the distributive main in Chicago on Wednesday.

During the month of October there were only 3,671 steerage passengers landed at New York, the lowest number since 1877. In the same month in 1891 there were 30,798.

President Harrison has appointed Silas Alexander, of New Mexico, to be Secretary of that Territory.

## Capital, Labor and Industrial.

At Providence, R. I., the Lonsdale company and the firm of B. B. and R. Knight notified their employes of an increase of wages to go into effect December 5. The amount of the proposed increase is not given out. This action will doubtless be followed by other cotton manufacturers in the State.

The Blackstone Manufacturing Company, cotton manufacturers, of Blackstone, Mass., will advance wages December 5. Prices have not yet been made known. At Lowell, Mass., the Carpet Corporation has followed the lead of the cotton mills, and raised wages 7 per cent, beginning December 5. August Dyon professes to think that business will hardly warrant the increase.

The telegraph operators employed by the Baltimore and Ohio R. R. Company have won a partial victory, the company granting an increase of \$5,000 a year, a little more than a quarter of the amount demanded.

Hoylstown, N. E., was visited by a destructive fire, which destroyed the large bakery and tobacco factory of Harvey & Co., erected on the site of a big fire last July. Loss, \$150,000; fully insured.

## Politics.

Complete but unofficial returns from the entire State of Illinois give Cleveland 422,842; Harrison 330,783. Altgeld, for governor, 429,999; Eifer, 398,542.

The smallpox epidemic at the general hospital at New Haven, Conn., continues unabated. Despite every possible effort to check the progress of the disease, new cases are breaking out each day.

Diastere, Accidents and Fatalities.

One life was sacrificed and two persons were seriously injured by a collision on the crossing of the Nickel Plate and Delaware, Lackawanna and Western Railways near Buffalo. It was caused by the apparent carelessness of a switchman.

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## PENNSYLVANIA'S VOTE.

The Presidential Ballot in the State by Counties. Gives Harrison a Plurality of 59,424.

Allgheny county having reported its official vote to the State Department at Harrisburg, the only missing county is Cambria, which, according to semi-official reports, gave Harrison 6,029 and Cleveland 6,250. The total vote for Harrison in the State is 510,011 and for Cleveland 452,594, making the former's plurality 57,417. The vote for Bidwell, Prohibitionist, exclusive of that cast in Cambria county, is 25,001; for the People's party, 8,567, and for the Socialist Labor party 887, making the grand total 1,002,730.

There is a difference in favor of the vote for the first electors on the several tickets of 7,877, as compared with the second and subsequent electors.

Four years ago the vote in Pennsylvania for President was divided as follows: Harrison, 529,041; Cleveland, 446,633; Clinton B. Fisk, Prohibitionist, 20,147; A. J. Streeter, United Labor, 3,873; James L. Curtis, American, 21.

The Presidential vote by counties at the last election follows—

COUNTY.	Popular Vote.			
	Harrison.	Cleveland.	Bidwell.	Weaver.
Adams	3384	3718		
Allegheny	43493	24088		
Armstrong	4981	3486		
Beaver	4809	382	322	354
Berks	4301	3954	101	
Berks	10677	18622	218	
Blair	7407	6253	391	49
Bradford	8105	4081		
Bucks	8230	8349		
Butler	5069	4159	625	99
Cambria	6029	6250		
Cameron	814	999		
Carbon	3180	3531		
Center	3926	4581	267	16
Chester	1082	7832	748	23
Clinton	2490	2679	130	
Crawford	5793	5738		
Crawford	2374	3074	171	22
Columbia	2398	4904		
Crawford	7162	6193	729	1955
Cumberland	4520	5416		
Dauphin	11010	7529	596	
Delaware	3291	5512	301	
Elk	2438	2325	85	
Erie	8819	7411	674	625
Fayette	6927	7438		
Forest	938	90	108	20
Franklin	5711	4985		
Fulton	983	1195	14	
Greene	3373	4214	85	
Huntingdon	8788	2798		
Indiana	4554	2191		
Jefferson	4069	3530	419	390
Juniata	1611	1080		
Lackawanna	10339	10140		
Lancaster	29230	16324	762	83
Lawrence	4370	3324	762	83
Lebanon	5421	3407		
Lehigh	7099	9909	312	49
Luzerne	14046	15496		
Lycoming	5736	7532	891	41
McKean	3933	2739		
Mercer	3845	4029		
Mifflin	1611	1980		
Monroe	1933	3979		
Montgomery	13391	13611		
Montour	1080	1854		
Northampton	6842	10329		
Northumberland	9165	6835		
Perry	3120	2705		
Philadelphia	115742	84488	1154	
Pike	473	1150		
Potter	20301	1887	681	
Schenck	11421	1977		
Snyder	2270	1491		
Somerset	4927	2519		
Sullivan	804	1283		
Susquehanna	609	352		
Tioga	6701	2521		
Union	2269	1590		
Venango	4102	3289	289	
Warren	3833	2727		
Washington	8009	6847	559	261
Wayne	2400	2945		
Westmoreland	10801	10747		
Wyoming	3929	1808	125	8
York	9923	12732	379	12
Total	511909	452545	11105	3116

Harrison's plurality, 59,424.

## BETS CAN NOW BE PAID

OF THE OFFICIAL VOTE IN PENNSYLVANIA, FOR IT IS HERE ANNOUNCED.

The official returns of the vote in all the counties for the State for Presidential Electors, Justice of Supreme Court, Congressmen at Large and other State officials have been received and computed. President Harrison polled 510,011 votes to President Cleveland's 452,594, and General Bidwell's 25,001. Harrison's plurality is 57,417. General Weaver polled 8,714 votes and the Socialist Labor electors 887 votes. General Daniel H. Hastings received one vote for elector in Bucks county. Charles Glasson in Lawrence county, and George Childs and Charles Leiber Clark one each in Montgomery county. Judge John Dean received 510,292 votes for Justice of the Supreme Court; Justice Heydrick, 446,001; Amos Briggs, Prohibitionist, 23,202; R. B. McCombs, People's party, 7,631; N. L. Crist, Socialist Labor, 840; Dean's plurality, 64,241.

General William Lilly received the highest number of votes cast for Congressman at Large, 512,567; Major Alexander McDowell polled 511,453; George A. Allen, 448,714; T. P. Merritt, 417,456; Simon B. Chase, Prohibitionist, 23,997; James T. McCrory, Prohibitionist, 22,930; S. P. Chase, People's party, 7,463; G. W. Dawson, 7,313; J. Mahlon Barnes, Socialist Labor, 674; Thomas Gandy, People's party, 635.

## NO CHOLERA IN HAMBURG.

An Official Statement Declaring the Plague is at an End.

The cholera epidemic at Hamburg was declared ended, when the following official statement was issued:

"The Senate herewith gives public notice, in accordance with a communication from the Imperial Chancellor, requesting all sea-port authorities to desist from imposing infectious disease supervision on vessels from Hamburg, that vessels arriving from Hamburg at foreign ports need no longer be regarded as infectious, and that the port and city of Hamburg are hereby declared free from infectious disease."

Passenger and goods traffic by railroad and sea is being fully resumed. The epidemic prevailed 12 weeks, during which time about 21,000 persons were attacked and over 11,000 died.

## THREE MEN KILLED IN CHIC